



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,441	02/08/2001	Masahiko Maeda	Q63016	4617

7590 03/30/2006
Sughrue Mion Zinn
Macpeak & Seas
2100 Pennsylvania Avenue NW
Washington, DC 20037-3202

EXAMINER

ZACHARIA, RAMSEY E

ART UNIT	PAPER NUMBER
----------	--------------

1773

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/762,441

Applicant(s)

MAEDA ET AL.

Examiner

Ramsey Zacharia

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,9,11,15 and 19-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,9,11,15 and 19-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 January 2006 has been entered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-3, 5, 9, 11, 15, and 19-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection because the following limitations do not appear to be supported by the disclosure as originally filed:

Art Unit: 1773

claim 1 - a tetrafluoroethylene resin containing not less than 39.4 wt% of tetrafluoroethylene,

claim 1 - a chlorotrifluoroethylene resin containing not less than 51 wt% chlorotrifluoroethylene,

claim 22 - a tetrafluoroethylene resin containing 39.4-46 wt% tetrafluoroethylene, and

claim 22 - a chlorotrifluoroethylene resin containing 51-61 wt% chlorotrifluoroethylene.

5. Claims 3, 20, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 3 recites the limitation "the cold resistance test" in line 2. There is insufficient antecedent basis for this limitation in the claim. This rejection may be overcome by replacing the above phrase with --a cold resistance test--.

7. Claim 20 is rendered indefinite because it is unclear if the "a fluorine-containing monomer unit" recited in line 2 is meant to be the only fluorine-containing monomer unit. As the claim reads now, requiring that a tetrafluoroethylene resin contain *a* monomer unit that consists of tetrafluoroethylene is redundant since, by definition, a tetrafluoroethylene resin must contain tetrafluoroethylene units.

8. Claim 21 is rendered indefinite because it is unclear if the "a fluorine-containing monomer unit" recited in line 2 is meant to be the only fluorine-containing monomer unit. As the claim reads now, requiring that a chlorotrifluoroethylene resin contain *a* monomer unit that consists of chlorotrifluoroethylene is redundant since, by definition, a chlorotrifluoroethylene resin must contain chlorotrifluoroethylene units.

Art Unit: 1773

9. Claim 21 is further rendered indefinite because it is unclear if "a chlorotrifluoroethylene resin" on line 2 refers to the chlorotrifluoroethylene resin of claim 1 or another chlorotrifluoroethylene resin. This rejection may be overcome by replacing the above phrase with --the chlorotrifluoroethylene resin--.

Claim Rejections - 35 USC § 103

10. Claims 1-5, 9, 11, 15, and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saitoh et al. (U.S. Patent 5,229,461) in view of Dessaint et al. (U.S. Patent 4,295,976).

Saitoh et al. teach a coating composition comprising a vinylidene fluoride copolymer which yields a film having excellent weatherability and stain resistance (column 1, lines 54-60). The copolymer comprises up to 30 mol% of units that may be tetrafluoroethylene or chlorotrifluoroethylene (see formula II where X is fluorine or chlorine) and units having a hydroxyl functional group (formula III) (column 2, lines 17-47). The composition further comprises a curing agent, such as an isocyanate, an amino resin, or an acid anhydride, that is reactive with the hydroxyl groups in the copolymer (column 9, lines 7-29). The coating may be applied over a primer coating, such as an acrylic coating (column 11, lines 1-11).

The monomer content of the copolymer taught by Saitoh et al. is given in mole percents as opposed to weight percents. The maximum tetrafluoroethylene and chlorotrifluoroethylene contents are determined as follows. The molecular weights are as follows: vinylidene fluoride is 64 g/mol, tetrafluoroethylene is 100 g/mol, chlorotrifluoroethylene is 116 g/mol, minimum for monomer III is 88 g/mol (R^1 is C_2 alkyl group), minimum for monomer IV is 86 g/mol (R^2 is C_1

Art Unit: 1773

alkyl group). For the maximum tetrafluoroethylene (or chlorotrifluoroethylene) content, the copolymer would comprise 68 mol% vinylidene fluoride, 30 mol% tetrafluoroethylene (30 mol% chlorotrifluoroethylene), 1 mol% monomer III, and 1 mol% monomer IV. On a 100 mole basis, this corresponds to 4352 g vinylidene fluoride, 3000 g tetrafluoroethylene (3480 g chlorotrifluoroethylene), 88 g monomer III, and 86 g monomer IV. That is, the maximum content on a weight basis of tetrafluoroethylene is $3000/7526 = 39.8 \text{ wt\%}$; the maximum chlorotrifluoroethylene is $3480/8006 = 43.5 \text{ wt\%}$. While 43.5 wt% chlorotrifluoroethylene is less than the recited minimum of not less than 51 wt%, the 39.8 wt% of tetrafluoroethylene is within the ranges of instant claims 1 and 22.

Regarding the stain resistance limitations in claims 1 and 2, the cracking resistance limitations in claims 3 and 4, and the hydroxyl value limitation of claim 9, these are taken to material properties of the coating composition. Since the coating composition of Saitoh et al. appears to be the same as that of the instant invention (especially since page 7, lines 17-19 of the instant specification cites the composition of JP-A-4-28707 as a suitable curable fluorine-containing resin and U.S. Patent 5,229,461 is an English language equivalent of JP-A-4-28707 as shown by Derwent abstract 1991-347997).

Regarding the limitations of claim 5, while Saitoh et al. is silent with respect to the weight of the coating, the coating weight of a protective coating is known to affect the degree of protection (e.g. stain resistance and weatherability). As such, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the weight of the coating, since it has been held that discovering an optimum value of a result effective

Art Unit: 1773

variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Saitoh et al. do not teach applying the composition to leather, however, the composition is taught as being applied on substrates such as metal, wood, concrete, plastic, and the like (column 11, lines 5-8).

Dessaint et al. disclose that materials such as metals, plastics, wood materials, concrete, and leather are considered equivalent substrates for fluorinated anti-staining coatings (column 1, lines 5-11). That is, Dessaint et al. shows that for anti-staining fluorinated coatings metal, wood, concrete, plastic, and leather are equivalent structure substrates.

Therefore, because these substrates were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to apply the coating of Saitoh et al. to any equivalent substrate, including leather, that is desired to be rendered stain resistant.

Response to Arguments

11. The art rejection over Saitoh et al. in view of Dessaint et al. is maintained because the recited mole percent ranges for the monomers of the copolymer of Saitoh et al. include a copolymer having up to 39.8 wt% of tetrafluoroethylene as calculated above.

Furthermore, the claims are rejected for containing subject matter which was not described in the originally filed specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention. The

Art Unit: 1773

evidence presented in the response filed 30 January 2006 has been considered but is not persuasive for at least the following reasons.

First, documents 1-3 are in Japanese with attached translations of selected paragraphs. These translations must be presented as part of a Declaration attesting to their veracity.

Second, assuming the translations are correct, the evidence presented is still inconclusive. In Documentary Evidence 1, from which the tetrafluoroethylene content of the ZEFFLE series resins are calculated, it is not clear that the 4F-type Room-curing type resin corresponds to the ZEFFLE series resin. The ZEFFLE tradename does not appear in the translated portions and it is not clear that all 4F-type Room-curing type resin are ZEFFLE series resins. Nor is it clear that the fluorine content results exclusively from tetrafluoroethylene units. Documentary Evidence 2 indicates that ZEFFLE resins are tetrafluoro-type FEVE resins, i.e. tetrafluoro-type fluoroethylene vinyl ether copolymer. If ZEFFLE contains a fluorinated vinyl ether, then it cannot be said that the fluorine content of the resin results exclusively from the tetrafluoroethylene. However, the calculations performed to arrive at a tetrafluoroethylene content of 39.4 to 46 wt% appear to assume that the fluorine content of the ZEFFLE resin results exclusively from the tetrafluoroethylene units. Likewise, Documentary Evidence 2 indicates that LUMIFLON is a trifluoro-type fluoroethylene vinyl ether copolymer; if LUMIFLON contains a fluorinated vinyl ether, then it cannot be said that the fluorine content of the resin results exclusively from the trifluoroethylene monomer. While Figure 1 of Document 4 and perhaps Figure 1 of Document 3 seem to indicate that the only fluorinated monomer is the $-\text{CF}_2\text{-CFX}-$ monomer, it appears that X is not limited to chlorine but may also be fluorine or $-\text{CF}_3$. If this is the case, then it calls into question the calculations used to derive the CTFE amount since the

Art Unit: 1773

LUMIFLONs containing CTFE may not fully support the entire 25-30 wt% range of fluorine content.

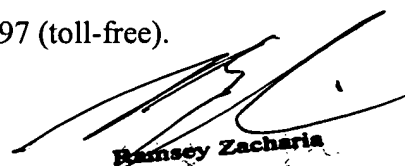
Finally, assuming the translations are correct and the ZEFFLE and LUMIFLON resins possess tetrafluoroethylene and chlorotrifluoroethylene content as calculated (i.e. 39.4-46 wt% and 51-61 wt%, respectively), the ranges recited in claim 1 (i.e. not less than 39.4 wt% TFE and not less than 51 wt% CTFE) would still represent new matter because these ranges encompass values outside the ranges of the ZEFFLE and LUMIFLON resins (i.e. greater than 46 wt% TFE and greater than 61 wt% CTFE).

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney, can be reached at (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ramsey Zacharia
Primary Examiner
Tech Center 1700